From: Valmichael Leos
To: Carlos Sanchez
Subject: Fw: SJRWP plans
Date: 08/02/2010 02:24 PM

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fyi

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----- Forwarded by Valmichael Leos/R6/USEPA/US on 08/02/2010 02:24 PM -----

From: Barbara Nann/R6/USEPA/US
To: Stephen Tzhone/R6/USEPA/US
Cc: "Charles Stone" <CSTONE@tceq.state.tx.us>, david.parmer@glo.state.tx.us, Ed Barth/CI/USEPA/US@EPA, Jessica.White@noaa.gov, "Jessica Mauricio" <JMaurici@tceq.state.tx.us>, "Linda Broach" <Lbroach@tceq.state.tx.us>, "Larry Koenig" <LKOENIG@tceq.state.tx.us>, "Luda Voskov" <LVOSKOV@tceq.state.tx.us>, Philip Turner/R6/USEPA/US@EPA, "Richard Seiler" <RSEILER@tceq.state.tx.us>, SHupp@hcphes.org, "Stephen Ellis" <STellis@tceq.state.tx.us>, "Tracie Phillips" <TPhillip@tceq.state.tx.us>, Valmichael Leos/R6/USEPA/US@EPA, "Vickie Reat" <VREAT@tceq.state.tx.us>
Date: 08/02/2010 02:18 PM
Subject: Re: SJRWP plans

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I just wanted to clarify some issues raised from the statements made from the attached email and to keep EPA, TCEQ, and the trustees focused on the following points in progressing with the RI/FS process.

(1) The RI/FS is evaluating all potential remedial alternatives for the site (For the pit underwater: MNR, capping, dredging, and excavation. For the land based contamination: excavation or containment system). All remedial options are on the table. This is true even if the time critical removal will place a temporary cap on the waste pits or that the PRP Group would like the remedial alternative for the source to be capping. EPA's analysis will no be geared toward justifying a particular result. EPA is just as seriously weighing doing excavation as a remedial alternative as it is doing capping as a potential remedial alternative for the site.
(2) The time critical removal action does not dictate the remedy to be chosen [excavation vs. capping for both pits]. EPA has chosen to temporarily place a granular cover. This does not mean that a cap is the remedy that EPA is moving

towards. It also does not mean that the time critical removal is the only action that will be taking with respect to the waste pits. The cover being placed onto the waste pits for the time critical removal is not meant to be permanent nor is it being designed to be such. In all likelihood some sort of dismantlement will have to occur: either to place a proper cap on the pits or to excavate them for offsite disposal. (3) If EPA requires certain sampling to be conducted (i.e. requiring site specific water column testing as part of the RI/FS) then the PRPs will need to conduct those samples. This is not a negotiation point. The RI/FS is being conducted under an UAO and EPA may dictate its requirements to fully characterize the nature and extent of contamination. If EPA needs sampling data for the characterization of the superfund site, then the PRPs are required to collect those samples. If the PRPs disagree, then they can choose to either comply with the overall UAO or not.

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▼ Re: SJRWP plans

Re: SJRWP plans

Stephen Tzhone to: Larry Koenig, Philip Turner 07/30/2010 05:01 PM

Cc: "Charles Stone", david.parmer, Jessica.White, "Jessica Mauricio", "Linda Broach", "Luda Voskov", Philip Turner, "Richard Seiler", SHupp, "Stephen Ellis", "Tracie Phillips", "Vickie Reat", Valmichael Leos, Barbara Nann, Ed Barth

Hi Larry, Phil, and all:

1) RPM summary:

- Larry: "...Water column will be represented by some unspecified mix of old TMDL data and partitioning-based estimates... Some TMDL analyses (i.e. fugacity ratios) suggested that the conventional wisdom applied to dioxin partitioning and dynamics may not fit the HSC/San Jacinto conditions very well, particularly in the vicinity of the SJRWP site, perhaps because the extraordinarily high sediment concentrations there are ***NOT*** in equilibrium with the water column (equilibrium is an underlying assumption of the BAF and BSAF methods)..."

- Phil: "...It looks like they will use some data from other efforts, but only

perform additional "estimates" water concentrations (see section 5.2.3 Water Data Gaps in the RI WorkPlan). The "estimates" will be based on methods presented in the Fate & Transport Modeling plan... Perhaps we've been expecting a separate water sampling plan - similar to their promises of a separate soil sampling plan...".

2) RPM status:

- Currently, there is no separate water column sampling required, as our previous comments did not object to utilization of the TMDL data and partitioning-based estimates. However, several current comments do deal with collection of contemporaneous surface water and sediment samples at tissue sample locations. In addition, we have plenty of previous comments on dioxin transport in pore water and on colloid particles (though this may be difficult to define or prove either way).

- I discussed these issues with David Keith today and have advised him that these issues are going to remain throughout the RI/FS. I have also advised him that even though the TCRA makes optional the integration of a geomembrane for pore water and colloidal transport, we will most likely be requiring site specific water column testing as part of the RI/FS to prove out these issues (regardless of variability in literature conclusions or our past nods for TMDL water column data and partitioning-based estimates). Lastly, we discussed the possibility that if at the end of the RI/FS, there is unacceptable human health or ecological risk due to a water column variable (especially if a geomembrane was elected to be not installed as part of the TCRA), then we would be looking at a situation of either wrapping a 'super-geomembrane' around the outside of the TCRA granular cover and revetment or dismantling it to implement some other alternative... and that's just on the site source, not including whatever would have to be done for rest of the site extent.

- David conveyed that he is not quite sure whether the PRPs would be willing to roll the dice on these issues in the RI/FS, especially since they are at the juncture of designing for the TCRA. He will be discussing with the PRPs and provide information relating to all the above prior or at our next comments resolution meeting.

- P.S.: Phil: The RI/FS schedule does show a Soil FSP coming in on Sep 2010.

Thanks,

Stephen L. Tzhone
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▼ "Larry Koenig" ---07/30/2010 11:10:36 AM---I have looked at the two parts of the RI/FS report mentioned by Phil. Those sections indicate that

From: "Larry Koenig" <LKOENIG@tceq.state.tx.us>

To: Philip Turner/R6/USEPA/US@EPA

Cc: Stephen Tzhone/R6/USEPA/US@EPA, <david.parmer@glo.state.tx.us>, <SHupp@hcphes.org>, <Jessica.White@noaa.gov>, "Charles Stone" <CSTONE@tceq.state.tx.us>, "Jessica Mauricio" <JMaurici@tceq.state.tx.us>, "Linda Broach" <Lbroach@tceq.state.tx.us>, "Luda Voskov" <LVOSKOV@tceq.state.tx.us>, "Richard Seiler" <RSEILER@tceq.state.tx.us>, "Stephen Ellis" <STellis@tceq.state.tx.us>, "Tracie Phillips" <TPhillip@tceq.state.tx.us>, "Vickie Reat" <VREAT@tceq.state.tx.us>

Date: 07/30/2010 11:10 AM

Subject: Re: SJRWP plans

I have looked at the two parts of the RI/FS report mentioned by Phil. Those sections indicate that water column concentrations will be estimated by modeling with standard partitioning assumptions .... "***For all applications, concentrations of COPCs in water will be estimated using a model (Section 6.1.5); the approach will be described in a technical memorandum on Fate and Transport Modeling (Section 8).***" [from page 107 of revised RIFS plan] ...which they contend is adequate for risk analyses about tissue and water consumption. I am not a risk assessor per se, so I don't know if it is.

The fate and transport plan says only what I initially cited. Water column will be represented by some unspecified mix of old TMDL data and partitioning-based estimates. No actual measurements are proposed.

But I do have some concern at the idea of calibrating the fate and transport modeling without any current water column data for comparing model results. It seems like an assumption that the standard partitioning models are more real than whatever might be measured at the site (and cheaper/easier).

Calibrating part of the transport model would not require "a prohibitively high number of samples" (section 5.2.3, page 70, of revised RIFS plan), as it is not for "empirical characterization of water chemistry" (same sentence) for risk assessment, but just to provide a few points within the spatial/temporal model realm where predicted values can be compared to measured. A few new samples would be more convincing as calibration points than results gathered 5 years (and 2 hurricanes) ago. If a few new samples give results similar to the older data, that would also support/enhance their proposed approach by demonstrating it to be reasonable.

lk

▼ Philip Turner---07/30/2010 09:47:24 AM---Also, see section 6.1.2, Surface Water

Investigation, of the RI Workplan

From: Philip Turner/R6/USEPA/US

To: "Larry Koenig" <LKOENIG@tceq.state.tx.us>

Cc: "Charles Stone" <CSTONE@tceq.state.tx.us>, "Jessica Mauricio" <JMaurici@tceq.state.tx.us>, "Linda Broach" <Lbroach@tceq.state.tx.us>, "Luda Voskov" <LVOSKOV@tceq.state.tx.us>, "Richard Seiler" <RSEILER@tceq.state.tx.us>, SHupp@hcphes.org, "Stephen Ellis" <STellis@tceq.state.tx.us>, Stephen Tzhone/R6/USEPA/US@EPA, "Tracie Phillips" <TPhillip@tceq.state.tx.us>, "Vickie Reat" <VREAT@tceq.state.tx.us>, Jessica.White@noaa.gov, david.parmer@glo.state.tx.us

Date: 07/30/2010 09:47 AM

Subject: Re: SJRWP plans

Also, see section 6.1.2, Surface Water Investigation, of the RI Workplan

▼ Philip Turner---07/30/2010 09:43:35 AM---It looks like they will use some data from other efforts, but only perform additional "estimates" wa

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Cc: "Charles Stone" <CSTONE@tceq.state.tx.us>, "Jessica Mauricio" <JMaurici@tceq.state.tx.us>, "Linda Broach" <Lbroach@tceq.state.tx.us>, "Luda Voskov" <LVOSKOV@tceq.state.tx.us>, "Richard Seiler" <RSEILER@tceq.state.tx.us>, SHupp@hcphes.org, "Stephen Ellis" <STellis@tceq.state.tx.us>, Stephen Tzhone/R6/USEPA/US@EPA, "Tracie Phillips" <TPhillip@tceq.state.tx.us>, "Vickie Reat" <VREAT@tceq.state.tx.us>, Jessica.White@noaa.gov, david.parmer@glo.state.tx.us

Date: 07/30/2010 09:43 AM

Subject: Re: SJRWP plans

It looks like they will use some data from other efforts, but only perform additional "estimates" water concentrations (see section 5.2.3 Water Data Gaps in the RI WorkPlan). The "estimates" will be based on methods presented in the Fate & Transport Modeling plan.

Perhaps we've been expecting a separate water sampling plan - similar to their promises of a separate soil sampling plan. I don't think we're going to get one.

▼ "Larry Koenig" ---07/30/2010 08:41:09 AM---Something occurred to me last night that I feel I must bring up with you all. Please see the attach

From: "Larry Koenig" <LKOENIG@tceq.state.tx.us>

To: Philip Turner/R6/USEPA/US@EPA, Stephen Tzhone/R6/USEPA/US@EPA, <SHupp@hcphes.org>, "Charles Stone" <CSTONE@tceq.state.tx.us>, "Jessica Mauricio" <JMaurici@tceq.state.tx.us>, "Linda Broach" <Lbroach@tceq.state.tx.us>, "Luda Voskov" <LVOSKOV@tceq.state.tx.us>, "Richard Seiler" <RSEILER@tceq.state.tx.us>, "Stephen Ellis" <STellis@tceq.state.tx.us>, "Tracie Phillips" <TPhillip@tceq.state.tx.us>, "Vickie Reat" <VREAT@tceq.state.tx.us>

Date: 07/30/2010 08:41 AM

Subject: Re: SJRWP plans

[attachment "WaterColumnSampling.docx" deleted by Barbara Nann/R6/USEPA/US]

Something occurred to me last night that I feel I must bring up with you all. Please see the attached Word document.

And forward to any other trustees or reviewers that should consider the issue. Like Jessica White, and Dave Parmer, at least, I don't seem to have their e-mail addresses.

lk

July 30, 2010

Last night, it occurred to me that I can remember no proposal for ***water column*** sampling and analyses for dioxins/furans (or other COPCs) in any of the SAPs we have reviewed relative to the San Jacinto River Waste Pits site. Since I am a water modeler and regulator, and because the only official target I have is a water quality standard expressed as a water column concentration, this seems like a big hole in the logic to me. I guess I didn't notice it before because there have been so many different media-specific plans that refer to each other, which makes it difficult to notice that something is missing.

Looking back at the fate and transport proposal:
I find a statement that water column data are needed for the QEAFate model, on pages 17-18 of initial draft:
"Calibration and validation of the dioxin fate and transport model will require these types of
data:

- Rate of temporal change of dioxin congener concentrations in the surface-layer of the sediment bed
- **Water-column dioxin congener concentrations**"

Below that, in Table 3 on page 18, the "Data Need" of "Water-column dioxin congener concentrations" is linked to the "Data Sources" of "Dioxin TMDL modeling study". It is not clear if this means the actual data collected (none more current than 2005), or means the results of model simulations.

Sediment core data will (try to) address the first bullet cited above. There is no indication that water column dioxin congener data will be collected along with the multitude of sediment and tissue samples.

Using the TMDL model boundary conditions as estimates of atmospheric and watershed loading (per Table 3) seems reasonable, as those are better estimates than generally available. Plus, they are not allowed time to sample air and runoff.

But water column concentrations are to be predicted by the fate and transport modeling, so should be calibrated to the same time period as the hydrodynamic and sediment inputs. Is it reasonable to think that water concentrations are more stable than sediment concentrations, so 5-yr old data are okay? No. Is it reasonable to calibrate a very detailed small scale model to output from a less detailed large scale model? Not this time, in my opinion.

Also, if it is necessary for them to sample tissue and sediment concentrations at the same time and place in order to evaluate bioaccumulation and BSAFs (as suggested by some comments), wouldn't it also be important to have synoptic water column data? Otherwise, no BAF calculations would be feasible. Nor would there be any way to determine if water concentrations were an "additional factor" (section 3.3, page 11 of Bioaccumulation Tech Memo) affecting tissue concentrations.

And, it seems to me there would be no way to verify whether standard partitioning coefficients actually fit the San Jacinto if there are not concurrent sediment and water data. Some TMDL analyses (i.e. fugacity ratios) suggested that the conventional wisdom applied to dioxin partitioning and dynamics may not fit the HSC/San Jacinto conditions very well, particularly in the vicinity of the SJRWP site, perhaps because the extraordinarily high sediment concentrations there are ***NOT*** in equilibrium with the water column (equilibrium is an underlying assumption of the BAF and BSAF methods).

So, I think we should require some water column sampling, at least as part of the fate and transport study, and perhaps in conjunction with the tissue/bioaccumulation studies. Have the RPs propose how much and where and when, but the method used must achieve adequately low detection levels.

Larry Koenig
TCEQ TMDL Project Manager

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